REMARKS

In the outstanding Office Action, the Examiner rejected claims 1, 8, 10, 16, and 18 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,426,269 to Haffner et al. ("Haffner"); rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Haffner in view of U.S. Patent No. 6,868,175 to Yamamoto et al. ("Yamamoto"); and objected to claims 2-6, 9, 11-15, and 17 as being dependent on a rejected base claim, but otherwise containing allowable subject matter.

By this amendment, Applicant has amended claims 1, 2, 6, 7, 9, 10, 11, 15, 17, and 18. Claims 1-18 remain pending.

I.   **Allowable Subject Matter**

Applicant gratefully acknowledges the Examiner's indication of allowable subject matter in claims 2-6, 9, 11-15, and 17. By this amendment, Applicant has amended claims 2, 6, 9, 11, 15, and 17 to place them in independent form. Accordingly, Applicant respectfully submits that claims 2, 6, 9, 11, 15, and 17 are allowable over the cited references, and claims 3-5 and claims 12-14 are allowable at least due to their respective dependence on allowable claims 2 and 11.

II.   **Rejection under 35 U.S.C. § 102(b)**

Regarding the Examiner's rejection of claims 1, 8, 10, 16, and 18 under 35 U.S.C. § 102(b), Applicant respectfully disagrees with the Examiner's assertions and

conclusions as set forth in the outstanding Office Action[1]. Accordingly, Applicant respectfully traverses this rejection.

In order to properly anticipate Applicant's claimed invention under 35 U.S.C. §102, each and every element of the claim in issue must be found, "either expressly or inherently described, in a single prior art reference." "The identical invention must be shown in as complete detail as is contained in the . . . claim. *Richardson v. Suzuki Motor Co.,* 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." *See* MPEP § 2131, 8th Ed. (Rev. 2), May, 2004.

Haffner, as cited by the Examiner at page 2 of the Office Action, cannot anticipate claim 1, because Haffner fails to teach a combination including "an edge line detector configured to detect a plurality of edge lines each of which has a size that is less than a line width of the electrical circuit pattern from the source data," as recited in claim 1.

Haffner teaches "pattern lines result from the pattern images of a much smaller mask being induced onto wafer 220 [wherein] [p]attern line 222 is illustrated to be on an edge" and "pattern line 222 is thinner in width than the other pattern lines." Haffner, col. 5, lines 44-49, 65-67. Haffner further teaches "using an OPC tool to calculate the widths of the edge pattern regions." *Id.,* at col. 3, lines 44-45. Haffner, however does not teach using the OPC tool "to detect a plurality of edge lines each of which has a size

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[1] The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement of characterization in the Office Action.

that is less than a line width … from the source data," as recited in claim 1 (emphasis added).

Haffner further fails to teach or suggest a combination including "an edge line modifier configured to modify each of the edge lines so as to prevent an excess optical proximity correction from providing incorrect data," as recited in claim 1.

At page 2 of the Office Action, the Examiner asserts that this element is taught by Haffner, and cites to col. 6, lines 41-48 for support of her assertion. The cited portion of Haffner states:

> inner regions 424-428 are created identical to design layout
> regions 402-408 in width and distance to one another.
> However, in order to compensate for the change in size of
> the pattern lines at the edges of the array, from the transfer
> of mask to wafer, regions 422, 424 at the edges of the mask
> are purposely made larger in size than design layout regions
> 402, 404. *Id.*, at col. 6, lines 41-48.

Haffner thus teaches compensating for a change in size of the pattern lines at the edges by making the edges of a mask larger. This cannot constitute a teaching of "an edge line modifier configured to modify each of the edge lines so as to prevent an excess optical proximity correction from providing incorrect data," as recited in claim 1.

Haffner also cannot anticipate claim 1, because the reference further fails to teach a combination including "a data synthesizer configured to generate pre-correction data from the modified edge lines and the source data," as recited in claim 1.

At page 2 of the Office Action, the Examiner asserts that this element is taught by Haffner, and cites to cols. 6-7, lines 57-4 for support of her assertion. The cited portion of Haffner, however, states to "compensate for the change in size of the pattern lines at

the edges of the array ... regions 522, 524, at the edges of the mask are purposely made larger in size than design layout regions." *Id.*, at col. 7, lines 1-4. <u>Haffner</u> is silent as to "a data synthesizer," and "generat[ing] pre-correction data from the modified edge lines and the source data." <u>Haffner</u> thus also fails to teach a combination including "a data synthesizer configured to generate pre-correction data from the modified edge lines and the source data," as recited in claim 1.

For at least the foregoing reasons, Applicant respectfully submits that claim 1 is allowable over <u>Haffner</u>, and claim 8 is allowable at least due to its dependence on claim 1.

Claims 10 and 18, while of different scope, recite elements similar to those recited in claim 1. Accordingly, claims 10 and 18 are allowable over <u>Haffner</u> for at least the reasons given above with respect to claim 1, and claim 16 is allowable at least due to its dependence on claim 10. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 1, 8, 10, 16, and 18 under 35 U.S.C. § 102(b).

III.   <u>Rejection under 35 U.S.C. § 103(a)</u>

Applicant respectfully traverses the rejection of claim 7 under 35 U.S.C. § 103(a), because a *prima facie* case of obviousness has not been established. To establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or suggest each and every element recited in the claims. *See* MPEP §2143.03, 8th Ed. (Rev. 2), May, 2004. Second, there must be some suggestion or motivation, either in

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the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of the three requirements must " be found in the prior art, and not be based on applicant's disclosure." *See* MPEP § 2143, 8th Ed. (Rev. 2), May, 2004. A *prima facie* case of obviousness has not been established because, at a minimum, the references, whether taken alone or in combination, fail to teach or suggest each and every element of the claims.

Claim 7 depends from claim 1, and thus requires all of the elements recited in claim 1. As discussed above, Haffner at least fails to teach or suggest a combination including "an edge line detector configured to detect a plurality of edge lines each of which has a size that is less than a line width of the electrical circuit pattern from the source data," as recited in claim 1, and required by claim 7. Yamamoto, cited by the Examiner at page 3 of the Office Action for allegedly teaching "a model data storage unit configured to storage [sic] the source data as reference model data," fails to cure the above-noted deficiency of Haffner.

Yamamoto teaches:

> first edges are detected from the pattern image to-be-inspected. Then, by comparing the first edge and the edge of the first reference pattern, the matching between the pattern image to-be-inspected and the reference pattern is performed. As a result of the matching, the shift quantity is obtained, and the first reference pattern is shifted by this shift quantity S_1. Yamamoto, col. 8, lines 26-32.

Yamamoto, however, does not teach or suggest "detect[ing] a plurality of edge lines each of which has a size that is less than a line width of the electrical circuit pattern from the source data," as recited in claim 1, and required by claim 7.

Because the references fail to teach or suggest every element required by claim 7, a *prima facie* case of obviousness has not been established. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claim 7 under 35 U.S.C. § 103(a).

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: December 21, 2005   By:_____
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